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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/541,966 | 07/11/2005 | Paul Stephens | CE031023P | 8770 |

22917 7590 01/19/2007

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| EXAMINER | |
|---|---|
| GONZALEZ, AMANCIO | |
| **ART UNIT** | **PAPER NUMBER** |
| 2617 | |

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
|---|---|---|
| 3 MONTHS | 01/19/2007 | PAPER |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/541,966 | STEPHENS ET AL. | |
| | Examiner | Art Unit | |
| | Amancio Gonzalez | 2617 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *14 November 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-4,6-14 and 16-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4, 6-14, and 16-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

1. This action is in response to Applicant's amendment filed on November 14, 2006. Claims 1-4, 6-14, and 16-21 are still pending in the present application. This action is made FINAL.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 1, 2, 4, 6, 9, 12, 14, 16, 18, 19, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shafran et al. (US PGPub 20030186693), herein after Shafran, in view of Dillinger et al. (US PGPub 20040058679), herein after Dillinger, further in view of Croslin (US Pat 6295275), hereinafter Croslin.

Consider claims 1 and 12, Shafran discloses a method of determining per-cell traffic coverage in a cellular communication system that comprises multiple cells **(see Shafran: Title; Abstract; pars. 0036, 0037; fig. 2)**. Shafran discloses

receiving measurements of parameters relating to one or more operations of a first cell in a cellular communication system **(for each cell in the region, computer 37 receives a measure of the traffic density in that cell, at a traffic measurement step 40 – see Shafran: par. 0037; fig. 2)**, wherein said parameters include information relating to how many and which cells serve a wireless subscriber communication unit **(this is accomplished by collecting handoff and traffic statistics – see Shafran: pars. 0014, 0021; fig. 2, element 44)**. Shafran discloses calculating a degree of coverage overlap for said first cell based on a number of said measurements by partitioning said measurements into at least one of three categories with respect to the first cell, selected from the group of: (i) A first category where the measurement indicates a wireless subscriber unit that is uniquely served by the first cell, (ii) A second category where the measurement indicates a wireless subscriber unit that can be served by cells other than the first cell, and (iii) A third category where the measurement indicates a wireless subscriber unit that is served by a neighboring cell but could be served by the first cell (**division of the cellular network into bins and clutter sub-types read into division of first, second, or third category, as Shafran describes, and calculate a degree of coverage per traffic density in a specific area –see Shafran: pars. 0033-0036; figs. 1 and 2. Regarding the measurement indicating a wireless subscriber unit that is uniquely served by (i) the first cell, by (ii) cells other than a first cell –reads: a specific reference cell-, or (iii) by a neighboring cell, is inherently determined by the**

**statistics reports, which measure the probability of a mobile terminal being served by a unique cell or combination of more than one cell in calculating traffic per cell coverage)**.

Although Shafran does not particularly refer to allocating an outage alarm priority for said cell based on the calculated degree of coverage, Dillinger discloses priority allocation **(see Dillinger: see par. 0038; fig. 1)** and Croslin discloses further allocating an outage priority alarm **(see Croslin: col. 5 lines 46-59)**.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the invention of Shafran and have it include priority allocation, as taught by Dillinger and Croslin, thereby providing means for detecting, preventing, or resolving a communication network failure.

Consider claim 2, Shafran, as modified by Dillinger and Croslin, teaches claim 1 and further teaches wherein the step of calculating a degree of coverage overlap based on a number of said measurements employs a statistically valid sample of said measurements (see Shafran: Abstract; pars. 0014, 0016, 0018, 0020, 0021, 0023; fig. 2).

Consider claims 4 and 14, respectively, Shafran, as modified by Dillinger and Croslin, teaches claims 1 and 12 above respectively, and further teaches converting a number of measurements to (which reads: receiving measure of the

traffic density in a cell and expressing it in) Erlangs to determine a coverage overlap based on subscriber traffic within said cell (see Shafran: par. 0037, formula 1).

Consider claims 6 and 16, Shafran, as modified by Dillinger and Croslin, teaches claims 1 and 12 above respectively, and further teaches wherein response to said calculation, re-configuring at least one operational parameter of said cell selected from the group of: a transmit power, a beam-forming antenna changes, and turning off a cell (with the information supplied to computer 37 – see Shafran: fig. 1- optimization of network parameters configuration are effected – see Shafran: pars. 0035, 0054, 0055; –turning off a cell is construed as "reducing wasted over-allocation," as stated in par. 0055).

Consider claim 9, Shafran, as modified by Dillinger and Croslin, teaches claim 1 above, and further teaches wherein the wireless communication unit receives measurement reports from a wireless serving communication unit selected from the group of; a base transceiver station and a wireless subscriber communication unit (see Shafran: pars. 0037, 0047, fig. 2, elements 43, 44, 46, 48).

Consider claim 17, Shafran, as modified by Dillinger and Croslin, teaches claim 16 above, and further teaches wherein said communication unit configures said cell for at least one of the group of; transmit power changes, beam-forming antenna changes, and switching off said cell site (computer 37 handles

information concerning network configuration, and this information may include, for example, the configurations of antennas 22, such as their frequency allocations, locations, height, transmission power- see Shafran: par. 0035; fig. 1).

Consider claim 18, Shafran, as modified by Dillinger and Croslin, teaches claim 12 above, and further teaches wherein said communication unit is an operations and management centre configured to receive measurement report data relating to cells in said cellular communication system (computer 37 –see fig. 1- serves as a control center communication unit, which measurement report data related to cells in the cellular communication system – see Shafran: pars. 0035-0037).

Consider claim 19, Shafran, as modified by Dillinger and Croslin, teaches claim 12 above, and further teaches wherein measured data includes at least one of the following: (i) Cell statistical information including at least one of Congestion, Blocking, Mean-Hold Time (MHT), and Handover (HO) Cause distribution information (see par 0042 and fig. 2, element 44); (ii) One or more Measurement Reports (see par 0037; fig. 2, element 50); and (iii) Control Signaling behavior (see Shafran: par. 0035).

Consider claim 21 Shafran, as modified by Dillinger and Croslin, teaches claim 12 above, and further teaches wherein said communication unit is able to communicate on at least on of a GSM, GPRS, UMTS, iDEN, and CDMA cellular communication system (see Shafran: par 0062).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 3 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shafran et al. (US PGPub 20030186693), herein after Shabran, in view of Dillinger et al. (US PGPub 20040058679), herein after Dillinger, further in view of Croslin (US Pat 6295275), hereinafter Croslin, as applied to claims 1 and 12, further in view of US Provisional Patent Application 60/369,368.

Consider claims 3 and 13, Shafran, as modified by Dillinger and Croslin, teaches claims 1 and 12 above respectively, but does not explicitly show, in US PGPub 20030186693, determining an unique coverage factor (UCF) for that cell, where: UCF = (Sum of MRs with no and/or weak neighbors)/ (Total Sum of MRs),

he refers to US Provisional Patent Application 60/369,368 –see par. 0038, wherein determining an unique coverage factor (UCF) for that cell, where: UCF = (Sum of MRs with no and/or weak neighbors)/ (Total Sum of MRs) is discussed (see US Provisional Patent Application 60/369,368: section 2 and formula 4). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Shafran in US PGPub 20030186693, Dillinger, and Croslin, and US Provisional Patent Application 60/369,368 for the purpose of providing methods and systems for estimating traffic distribution related to cell coverage in a mobile communication network.

8. Claims 7 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shafran et al. (US PGPub 20030186693), herein after Shabran, in view of Dillinger et al. (US PGPub 20040058679), herein after Dillinger, further in view of Croslin (US Pat 6295275), hereinafter Croslin, as applied to claims 1 and 12, further in view of Andersson (US Pat 6173168).

Consider claims 7 and 20, Shafran, as modified by Dillinger and Croslin, teaches claims 1 and 12 above respectively, but does not explicitly show storing said calculations or using said stored calculation subsequently to determine a cell outage strategy. However, Andersson, in the same field of invention, teaches storing information and developing cell outages recovery strategies using the recorded information (see Andersson: col. 3, lines 63-67; col. 4, lines 1-13; col. 5, lines 11-22;

figs. 1 and 3). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Shafran, Dillinger, Croslin, and Andersson for the purpose of effectively restoring cells in a radio communication network.

***Response to Arguments***

9. Applicant's arguments with respect to Claims 1-4, 6-14, and 16-21 have been considered but are moot in view of the new ground(s) of rejection, which the Examiner has based on a reference provided by the applicant information disclosure statement (see MPEP Chapter 700 on rejection based reference provided under information disclosure statement).

***Conclusion***

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any response to this Office Action should be **faxed to** (571) 273-8300 **or mailed to**:

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

**Hand-delivered responses** should be brought to

Customer Service Window
Randolph Building
401 Delaney Street
Alexandria, VA 22314

12. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Amnion Gonzalez, whose telephone number is (571) 270-1106. The Examiner can normally be reached on Monday-Thursday from 7:30am to 5:00pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Nick Corsaro can be reached at (571) 272-7876. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status

information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or 703-305-3028.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist/customer service whose telephone number is (571) 272-2600.

*Amancio González*
AG/ag

January 11, 2007